VCE ALGORITHMICS (HESS) Rubric for School-assessed Coursework performance descriptors for Unit 4

Performance descriptors provide holistic statements of achievement developed from the outcome statement and its key knowledge and skills, as specified in the study design. These will be used by teachers in making judgments about the student’s level of performance. There are five levels of performance and each level corresponds to a mark range.

| VCE ALGORITHMICS (HESS)  Unit 4 SCHOOL-ASSESSED COURSEWORK | | | | | | | |
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| PERFORMANCE DESCRIPTORS | | | | | | | |
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| DESCRIPTOR: typical performance in each range | | | | | | | |
|  | Mark Range | | **Very Low** | **Low** | **Medium** | **High** | **Very High** |
| ***Unit 4***  ***Outcome 3***  **On completion of this unit students should be able to explain the scope of algorithmics as an approach to computational problem solving, and demonstrate the universality of computation and its limits using core concepts from theoretical computer science** | 1 - 100 | | Briefly outlines the basic characteristics of a Turing machine with some errors. | Describes some of the characteristics of a Turing machine with few errors. Executes one step of a Turing machine. | Describes most of the characteristics of a Turing machine. Executes a fixed number of steps of the Turing machine. | Describes fully the characteristics of a Turing machine. Creates an appropriate representation of an instruction set for a Turing machine, with some errors in the representation. Executes a fixed number of steps of the Turing machine. | Describes comprehensively the characteristics of a Turing machine. Creates an accurate and appropriate representation of an instruction set for a Turing machine. Executes a fixed number of steps of the Turing machine. |
| Briefly outlines the Halting problem, with some minor errors. | Describes some of the core characteristics of undecidable problems, with few minor errors. | Describes most of the core characteristics of undecidable problems connected to a specific example. | Describes, using subject-specific language the core characteristics of undecidable problems connected to some examples. | Describes comprehensively, using subject-specific language the core characteristics of undecidable problems and explains the implications of undecidability. |
| Briefly outlines the goals of Hilbert’s program, with some minor errors. | Describes the goals of Hilbert’s program and its outcome, with few minor errors. | Describes accurately the goals of Hilbert’s program, its outcome and its historical context. | Describes the goals of Hilbert’s program, its outcome, its historical context and connection to the origin of computer science. Provides an explanation of the implications of the failure of Hilbert’s program. | Describes comprehensively the goals of Hilbert’s program, its outcome, its historical context and connection to the origin of computer science. Provides a logical and detailed explanation of the implications of the failure of Hilbert’s program. |
| Briefly outlines the core argument of the Church-Turing thesis. | Describes the core argument of the Church-Turing thesis. | Describes clearly the core argument of the Church-Turing thesis and its historical context. | Describes fully the core argument of the Church-Turing thesis and its historical context. Explains clearly the meaning of the Church-Turing thesis and its limitations. | Describes comprehensively the core argument of the Church-Turing thesis and its historical context. Explains comprehensively the meaning of the Church-Turing thesis and its limitations. |
| Briefly outlines the core argument of the Chinese Room Argument. | Describes some of the core argument of the Chinese Room Argument. | Describes clearly the core argument of the Chinese Room Argument, its historical context and one common reply to the argument. | Argues either for or against the Chinese Room Argument, providing details about the core argument and common replies. | Argues either for or against the Chinese Room Argument and its replies to establish a substantiated position on the argument. |

KEY to marking scale based on the Outcome contributing 100 marks

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| Very Low 1-19 Low 20-39 Medium 40-59 High 60-79 Very High 80-100 |